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ABSTRACT

This is a study of the processes involved in second language learning in which the principal subject was an Iranian child who learned English in the United States without formal instruction. Some of the questions dealt with in this study include: what motivates language learning in a child; what makes the linguistic structure of a language more or less difficult to acquire; what effect teaching structure has on rule formation; what some of the criteria are for language selection in a multilingual environment; what some of the characteristics are of language switching; what an analysis of discourse can tell us about the process of rule formation in the speech of one second language learner; and whether transformational grammar is an adequate model for describing question development in the speech of one second language learner. The main conclusion is that any theory of language acquisition must consider the many variables that interact in communication. (Author/AM)

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COMPARATIVE STUDIES IN SECOND LANGUAGE LEARNING

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CHAPTER 1

INTRODUCTION

There are qualitative differences between learning a first and a second language. The second language learner is usually older, which means that he is cognitively more mature and is already familiar with many of the features of one linguistic system. In addition, we cannot assume that the amount of exposure to a new language as well as the nature of that exposure is equivalent for first and second language learners. There is certainly a vast difference among second language learners alone in the quality and amount of their exposure to a new language.

Despite these differences, children can and do learn a second language. Therefore, we can hypothesize that many of the same process strategies operating in first language learning also operate in second language acquisition. This hypothesis has influenced the types of questions asked in the last decade of language research. Two of the most comprehensive have been: Are there developmental sequences in second language learning which are similar to those found in first language learning? and Are there universal language learning strategies operating in all language learners?

Researchers have found that many of the same strategies operating in first language acquisition are also involved in second language learning. However, this does not mean that the language product in both groups of learners will necessarily match. Dulay and Burt (1974), for example, have found widespread discrepancies in the order of appearance of morphemes between first and second language learners. Conversely, it is not always true that similar language products are evidence of similar process strategies. This is particularly clear when we analyze the function of grammatical forms in the learner's speech.

It would seem that children acquire language more easily than linguists have been able to describe the acquisition process. A good deal of the problem is that our research has concentrated heavily on language structures and little on how those structures function in communication. Although Hymes (1972) for over a decade has been calling for a theory based on language as it functions in speech, few have heeded the call. Even fewer have consistently examined the function of the learner's language as it occurs in discourse.

Although the form and function of speech in discourse is a vastly unexplored area in second language research, Hatch (1974) has demonstrated that discourse patterns are potentially rich sources of information about the language learning process. She has shown, for example, how input influences the acquisition of forms in the learner's speech, a finding that will be discussed later in more detail.

An analysis of communication patterns can also tell us about the learner's own rule formation strategies. Furthermore, it is through such an analysis that the interplay between what the learner says, how it is interpreted, and the effect of that exchange on subsequent speech is coordinated.

Ultimately, a theory of language learning must be based on the assumption that language development is a process involving a complex blend of variables. Therefore, language research should examine all of the variables which may influence the learner and the learning process. These include the characteristic features of the learner's personality and of his environment, the structure and the function of his speech in communication, and the data from discourse between the learner and native speakers of the target language. The topics discussed in the following pages have been selected on the basis of this assumption. Some are the result of research in other language learning studies; others are relatively unexplored areas in the literature. Each chapter will include the major studies in both first and second language acquisition which are relevant to the discussion.

The questions to be discussed are grouped according to the chapters in which they appear. They are:

1. Why might a child be motivated to learn a new language? What are the defining characteristics of language immersion? What makes the linguistic structure of language more or less difficult for a child to acquire? Does teaching a structure have an immediate effect on rule formation? What effect does age have on the input to the learner?
2. What are some of the criteria for language selection in a multilingual evironment? What are some of the characteristics of language switching and mixing?
3. What is the semantic function of What's this? in the speech of one second language learner?
4. What are the form and function of one second language learner's progressive?
5. What can an analysis of discourse tell us about the process of rule formation in the speech of one second language learner?
6. Is transformational grammar an adequate model for describing the question development in the speech of one second language learner?

CHAPTER 2

THE SUBJECT AND METHOD OF DATA COLLECTION

The Subject

The principal subject of this study was Homer, an Iranian child who learned English in the United States without formal language instruction. He arrived from Iran on January 7, 1973, and at that time spoke both Persian and Assiryian, a Semitic language. At the onset of the study he was 5;11 years old.

Assiryian was Homer's native language as well as the language he spoke with relatives in Los Angeles. He had learned Persian from his playmates in Iran, but there were few people to speak it with regularly in the States. By April, Homer claimed that he did not understand the questions occasionally asked of him in Persian.

Procedures

Homer's family was anxious that he learn English, and the writer began to observe him very soon after his arrival. He was enrolled in a nursery school on January 17 and attended the morning session for three hours each weekday with approximately 25 other children from three to six years old.

As Homer was both sociable and likeable, he made friends quickly. After school and on weekends he usually played with children his own age in his neighborhood, all of whom were native speakers of English. His estimated exposure to English from January through June was 20 hours a week, a total of 400 hours during the five-month period of observation. Homer was withdrawn from nursery school in late February, but he still had contact with his English-speaking friends at home.

Data on Homer was collected from January to June of 1973 and always included input, that is, the speech addressed to Homer, as well as his own utterances. Data was obtained at seven different sessions each month, averaging a total of eight hours of monthly observation. Two of these sessions were taped each month.

In order to collect varied samples of Homer's speech, no attempt was made to observe Homer consistently at regular intervals. This was possible since he lived in the apartment above the writer and frequently played with his friends within hearing range. Observations alternated between his school and home activities.

While Homer's data was the basis for the majority of questions in this study, many of the discussions draw information from other studies on first and second language learners. Hereafter the subjects of these studies will be referred to by name.

CHAPTER 3

SOCIAL AND LINGUISTIC VARIABLES IN LANGUAGE LEARNING

Motivation for Learning a New Language

While it is true that some of us study a language in hopes of eventually using it abroad, many believe that we are most highly motivated to learn a new language when we feel ourselves to be members of the new language community. This certainly seems true when we look at the study of six-year-old Eva (Kenyeres, 1938). Before moving to Switzerland, Eva rejected her father's attempts to teach her French. In Switzerland she still showed no interest in the language until she met two French-speaking children with whom she wanted to make friends. Disappointed at not being able to understand them, Eva reprimanded her father for not teaching her French sooner, and from that point on, she conscientiously began to learn French as her second language.

Paul (Huang, 1970) and Homer, both five-year-olds, also began to learn the language of a new community soon after they arrived in the United States from Taiwan and Iran, respectively. However, their first utterances were not for the purpose of making friends, but were meant to protect their play territory at school. No! Stop it! and Don't! Homer shouted at a boy who had overstepped his bounds, while Paul had a memorized formula, Get out of here!, for making troublesome children disappear.

Of course, there are other benefits to learning a language beyond interaction within a language community. Social prestige should be included in the list of variables motivating language learners. When asked if she enjoyed speaking Spanish, a child in the Spanish Immersion Program for Anglo children in Culver City replied, "Yes, because it makes the other children jealous of me. They can't speak Spanish," (Lebach, 1974). Conversely, studies show that when there is little social value placed on the second language, motivation to learn it will be quite low (Labov, 1965; Ervin-Tripp, 1967).

Language Immersion

Most of the information we have on young second language learners--and certainly all that is available on first language learners--comes from studies performed on learners who are immersed in a new language environment. Researchers have traditionally used the term "immersion" to denote exposure to language that has neither been structured nor sequenced for the learner's benefit. In other words, the learner acquires language simply by participating in the community which uses it. Somehow he learns about grammatical categories, the rules of arrangement of these categories, phonetic and semantic distinctions, and the particular morphemes which represent semantic and grammatical categories (Ervin-Tripp, 1967).

A language community need not be defined in terms of size and setting. It may be a single parent and a set of grandparents, as in the case of Louie (Ronjat, 1913) and Hildegard (Leopold, 1939, 1947, 1949) or a nursery school, as it was for Homer, Paul, Takahiro (Itoh, 1973), Adams' subjects (Adams, 1974), and Young's children (Young, 1974). Those working in the Culver City Immersion Project have found it possible to design a Spanish language community within the walls of an Anglo elementary school simply by establishing Spanish as the medium of classroom instruction. After three years in the Immersion Program, Anglo children who formerly had no background in Spanish are writing and speaking the language. Furthermore, they are developing positive attitudes toward the Spanish language and culture, and foreign language learning in general (Lebach, 1974). While immersion programs are new to the United States, there are many in Canada which have been just as successful as the Culver City Program (Lebach, 1974).

Linguistic Variables in Language Learning

When a person does begin to learn a new language by immersion, what makes the linguistic structure of the language more or less accessible? In searching for answers to this question, researchers have looked at frequently produced forms in the input to see what effect they have on the learner's own speech. We might also look at the kind of language addressed to the learner for evidence of language filtering. Similarly, we can compare input to a young learner with that to an older one to see if there is any difference in semantic load or structural complexity, and, if so, how this might affect the learning task.

Frequency as a Determiner of Acquisition

Because Brown (1973) found no significant correlation between frequently produced morphemes in parental speech and those first acquired by children, he concluded that frequency alone does not influence the order of morpheme development in first language learning. Padilla and Liebman (1974), on the other hand, found that the criterion for language selection in Spanish-English bilingual children was the frequency of input. Children tended to use the most frequently occurring pattern in their environment as a basis for their own speech. Boyd (1974) found that infrequent exposure to a form may likewise delay its acquisition, especially if the form itself poses learning difficulties for the child.

While frequency alone is not a sufficient determiner of acquisition, it does have an effect. Slobin (1973) in testing for language universals in first language learning and Hatch (1974) in searching for the same in second language learners, have suggested that there is a blend of variables which makes the structure of language more or less available to the learner.

Hatch found that some frequently occurring forms in the input influence rule formation. This...noun, for example, was a pervasive first rule in the speech of second language learners because observers continually asked their subjects What's this? in an attempt to collect data or teach the children new words. However, children did not learn to form all of the questions they were frequently asked. Although Paul learned Where's questions quickly, he did not acquire questions with obligatory be-inversion or do-support. Hatch (1974) suggests that neither do nor is contains the semantic value of where's, and the number of variant forms for be and do increased the difficulty of the learning task. It is not surprising that Paul acquired these sentences later.

Hatch's analysis led her to conclude that there are general predictions we can make about language development. If a linguistic form requires changes in the word order, it will be learned late. If there are a variety of forms for one function, such as plurality with allomorphs /s/, /z/, and /əz/, they will be acquired late. Any combination of these variables will make the form more difficult to learn and will consequently delay its acquisition. Forms of low frequency and low semantic power receiving tertiary stress (or no stress) and having a multiplicity of forms and functions will take the longest to learn (Hatch, 1974). These are the same principles Slobin (1973) found operating in the speech of first language learners, which suggests that they are language-free process strategies that occur in all language learning.

Effects of Teaching in Observational Studies

While most investigators say that they have made a conscious effort to maintain a "natural language environment" for their subjects, all observational studies contain data indicating that the learner is being taught. Usually "lessons" consist of words or model sentences which the learner is encouraged to imitate. By doing so, the observer hopes his subject will perceive a generalizable language rule.

The effects of language drills on subsequent speech production are modified by the same operating principles discussed by Slobin and Hatch. If the function of a pattern is unclear to the child, the form will not be learned. This is consistent with Ervin-Tripp's (1973) finding that learners remember best the items they can interpret. If the form requires morphological markings or structural inversions that are more complex than those which occur in the learner's free speech data, the rule will not be acquired. We will see evidence of teaching in conversations between Huang and Paul and the immediate effect it had on Paul's speech production.

Effects of Teaching on Paul's Progressive

If input were the only criterion for language acquisition, Paul would have learned the progressive by the end of Huang's five month observational study. He did not learn the pattern, however, and

rarely produced the subject-verbing form on his own, despite the well-sequenced teaching techniques of his observers which are illustrated in the dialogue below:

OBSERVER	PAUL
1. Paul, are you writing?	2. Yeah.
3. What are you doing?	4. I'm write.
5. Paul, are you writing?	6. Yeah.
7. What are you doing?	8. I'm writing.
9. What's the baby doing?	10. Baby cry.
11. Is the baby crying?	12. Yeah.
13. What's the baby doing?	14. Baby is crying.

Although Paul was able to respond appropriately when asked the yes/no question, Are you V-ing?, his response was little more than modified imitation with the application of appropriate inversion rules to change the question into a statement. Paul never produced the progressive pattern on his own without support from the structured dialogue that Huang initiated. Then, when he did produce the progressive, he usually omitted either the AUX or the -ing affix. The task of remembering to insert both obligatory morphemes required more concentration than Paul was able to (or wanted to) devote to form at that point.

Aside from the fact that Paul did not appropriately mark the progressive, he did not semantically contrast the progressive form with any other verb form in his speech. Furthermore, there is no evidence that he perceived the function of the progressive in the speech of others.

Paul omitted the progressive morpheme most frequently when answering the question What are you doing? because he could not form the required analogy between doing and verbing. Although he could produce the progressive form in a dialogue when the question Are you verbing? was followed by What are you doing?, the correct pattern did not generalize to new responses. Just 15 lines later, in the same dialogue, the discourse looked like this:

OBSERVER	PAUL
What are you doing now?	I'm sleep.
Sleeping!	

The observer, however, persisted with his questions, and perseverance did pay off. When both observer and language learner came to terms, it appears to have been a peaceful surrender.

OBSERVER	PAUL
What are you doing on the chair?	I'm sit down on the chair.
I'm sit down on the chair. O.K.	

Form and Function in Language Acquisition

The function of a form in communication is an important variable to consider when explaining non-mastery of a form. The marked progressive in the preceding dialogue was not essential for understanding what Paul was doing. Paul's own pattern, I'm sit down on the chair, offered as much semantic information as I'm sitting down on the chair would have. In fact, the question need not have been asked in the first place, as the investigator could clearly see what Paul was doing.

Often the linguistic structure necessary for communication is far simpler than the correct linguistic expression of the communicative intent, for all languages have built-in structural redundancies which the learner initially avoids in his speech (Hatch and Wagner-Gough, 1974; Slobin, 1973).

Language Environment and Age as Determiners of Language Input

We have discussed language-sequencing strategies used by second language researchers. There is evidence that language filtering occurs with first language learners as well. Holzman (1972) contends that the child's linguistic environment is not a complete corpus of adult speech nor a haphazard selection from that corpus. Language filtering is often dictated by convenience, as the adult knows that a complex pattern will not evoke an appropriate response from the child. Such a graded environment may also assist the child, since the number of semantic notions and linguistic forms which he must sort through is reduced.

From one study, it appears that simplified input is not a luxury enjoyed by the older learner immersed in a new language environment, and this ultimately increases the difficulties of the language learning task for him. We will have to qualify our definition of immersion to reflect more appropriately the language environment to which the learner is exposed.

Age as a Determiner of Input

Although most second language research has been conducted with children, we have evidence which strongly suggests that the nature of the input language differs more on the basis of the learner's age than on the number of languages he knows. The input for Ricardo (Butterworth, 1972), a Spanish-speaking adolescent immersed in an English-speaking environment, is far more complex both linguistically and semantically than the language input we have for

children who have spent the same amount of time in the United States. It's no wonder that children appear to learn language so quickly. We simplify their task, tolerate their errors, and then marvel at how quickly they are able to string an uninflected verb to a noun (Hatch and Wagner-Gough, 1974). These attitudes and expectations may well determine the ease with which a second language is acquired.

Input to a Child

When looking at the input data for Paul, a five-year-old child, we find that it is usually contextualized within his immediate environment. The stimuli surrounding Paul provided the impetus for communication. That which he could see, identify, and act upon became the topic for conversation. In fact, the most common sentence patterns in the input for months 1 and 2 were questions asking for identification (What's this?, Is this a NP?); questions involving location of the object (Where's NP?); and imperatives (Come here. Take one. Hold my hand. Put this in the box.). Imperatives accounted for over half of the input data in the first two months. Furthermore, much of what Paul was told to do required few language cues, as gestures, tones, and context provided most of the semantic information. An outstretched hand, for example, clarified the meaning of Hold my hand.

In the conversations between Paul and his observer, we can see that language patterns with substituted vocabulary were constantly recycled into the dialogue:

OBSERVER	PAUL
1. Is this your ball?	2. Yeah.
3. What color is your ball?	4. (no answer)
5. Is that your doggy?	6. Yeah.
1. Two trucks.	2. Yeah.
3. Where's the other one?	4. Other one?
5. Show me the truck.	6. Truck? This.
7. Show me another one.	
8. Where's Joe's car?	

It was not unusual for Paul to offer an inappropriate response to a question. At times this was an error in the interpretation of the question; at other times it was simply a response made for the pleasure of speaking. However, besides learning about language as symbolic representation, Paul was learning about its function in social discourse. He was learning that a question is followed by an answer, and that in a response, the speaker's point of view is considered in relation to the general topic of discussion. Flavell (1969) claims that conversational rules are not mastered in speech until the age of eight, which may explain some of Paul's inappropriate responses as well as the willingness of his investigators to let them pass uncorrected. There are times when the

uninterrupted flow of the dialogue appears to have been more important to Paul and the investigators than the actual exchange of information. A series of unexpected answers, however, could certainly inject a fanciful logic into the conversation:

OBSERVER	PAUL
1. Paul, where are you going?	2. What are you doing?
3. No, where are you going?	4. I'm going to
5. Where are you going to?	6. Yeah.
7. Paul, stop that.	8. Stop that. (P. stopped.)
	9. Oh! Airplane.
10. How many?	11. One, two, three.
	My name is Paul.
	How are you?
12. Fine thank you. How are you?	13. Fine.

In reviewing the nature of the language addressed to Paul, we can see that he was not totally immersed in an adult language environment. Because he was a child, there was a very limited body of graded language data adults expected him to manipulate. Language patterns in the input data were simple; many were formulas, and adults were very forgiving of his errors. Discourse complemented the activity that Paul and the people around him were involved in so that language was a medium for describing environmental stimuli. Because Paul was also learning the rules of social discourse, the dialogues between him and adults were often allowed to flow freely, despite some of his inappropriate responses to the investigator's questions.

Input to an Adolescent

Ricardo, a thirteen-year-old from South America, had a very different language experience. After the same amount of exposure to English as Paul (three months), he was expected to interpret and respond to much more difficult concepts and linguistic patterns than was Paul. Sentences addressed to him were not consistently simplified as Paul's had been but contained embedded clauses, idioms, and a wide range of vocabulary that was incomprehensible to him. Ricardo was asked to supply reasons for quite obscure why-questions, even though why-questions are not found in the input data for children until the very late stages of their language development. The dialogue below illustrates some of these more complex patterns in the language addressed to him:

OBSERVER	RICARDO
1. Do you know what a question is?	2. Question mark.
3. Yeah. What do we mean when we say question?	4. Question?
5. What do we mean by question marks? What do we mean? What does question mark mean?	6. This a (points to question mark).

7. Yeah. But why do we put that mark there?
8. This.
9. Why do we put that mark there? See, we don't have it there. We just have a period there.

Most of the dialogues between Ricardo and his investigators focused on displaced activities. That is, they related to past and future events or to those things that Ricardo usually did during the day (see dialogue below). This type of discourse requires a higher degree of abstraction than the language of commands, NP location, or NP identification in adult-child discourse.

OBSERVER	RICARDO
1. Do you wrestle?	2. No.
3. No?	4. I like look.
5. You like to watch.	6. No me wrestle.
7. You don't like to do it yourself. You'd rather watch. Let's say "watch."	8. Hm?
1. What are you gonna do tonight?	2. Tonight? I don't know.
3. You don't know yet? Do you work at home, do the dishes or sweep the floor?	4. Water. (garbled)
5. You water?	6. Flowers.
7. Flowers.	8. Mud.
9. Oh. You wash the mud down and all that. What else do you do at home?	10. Home.

Even the investigator's well-devised pantomime was not as effective for conveying meaning as the visual stimuli usually surrounding adult-child or child-child speech:

OBSERVER	RICARDO
1. In Colombia, do they (lobsters) have claws?	2. Claws?
3. Claws. Do they have...the lobsters, do they have claws? (forms hand into claws)	4. Octopus?
5. No. The lobsters. Do the lobsters have hands?	6. Huh?
7. I don't know how to say it. I know...I am a lobster. This is my, this is my...I am a lobster. This is my...claw (forms hands into claws).	8. Hm. Hm.
9. Do lobsters in Colombia have claws? Like this, you know? They pinch people.	10. Lobster?

Adults who tried to simplify their speech for Ricardo still used more complex language and included a larger lexicon than those who spoke with Paul and the other children observed learning a second language. This is because the very nature of adult-adult communication is different from adult-child or child-child discourse. Adults discuss abstract ideas and activities that are displaced in time, while children describe things of the here and now.

Effects of Complex Input Data

It is difficult to measure the effect that this more complex speech produces on an adult. Ervin-Tripp (1973) contends that with a simpler semantic task--one of description rather than analogy or inference--there is less likelihood that the speaker will resort to other-tongue formations. These other-tongue formations may appear in the form of idiosyncratic language rules, fossilizations, pidginizations, or translations and loan words from a first language. It is true that at the study's end, Ricardo had made little progress in learning the rules of English.

Aside from his lack of perceptible progress, Ricardo became more and more frustrated with English and more self-conscious about his inability to express himself. Whereas he had initially been enthusiastic about learning a new language, at the study's end he was disappointed in himself and the whole project. The linguistic demands placed on him as an adult language learner may have been the principal cause of his frustrations and the reason for his lack of progress. To avoid some of these problems, Greenfield (personal communication, 1974) suggests that the adult second language learner attach himself to a child who is learning his first language. Similarly, an adult paired with a child learning the same second language could prove to be an effective learning relationship. Certainly the idea is worth an adult's consideration, as he could practice simpler discourse contextualized in the activities and stimuli of the immediate present. Moreover, he may not feel as many pressures to perform correctly if paired with a child who displays no concern over the structure of his own utterances.

Summary

There are a variety of reasons for learning a new language: social prestige, friendship, and protection, to name a few. In studying language acquisition, researchers have asked what makes a linguistic structure more or less accessible to the language learner. While frequency in the input has been shown to be an important determiner for the acquisition of form, it is a blend of variables, including linguistic complexity and semantic function, which is ultimately responsible for the acquisition of a pattern in both first and second language learning. Even a well-sequenced dialogue cannot teach the learner a structure he is not yet ready for, although it may simplify his task by reducing the number of language patterns to which he must attend.

Although language filtering and sequencing are found in the input to the young language learner, they are not pervasive in the input to an adult learner. Ultimately, we will have to determine how the lack of sequenced structures and teaching patterns affects the older learner and with this knowledge redefine the term "language immersion" to distinguish more clearly between immersion for the child and immersion for the adult.

The study of the linguistic features of language learning can be closely tied to the social variables influencing language development and language use. These are particularly relevant issues when discussing language preference, language selection, mixing, and switching--the topics of chapter 4.

CHAPTER 4

LANGUAGE USE OF A BILINGUAL CHILD

Language Selection

When operating with multiple linguistic systems, the learner must establish a criterion for selecting one language over another. Studies show that the criterion for language selection varies from learner to learner, and as Leopold (1954) suggests, it may be just as rooted in psychology and sociology as it is in linguistic theory.

At 6;5 years Hildegard spoke German with her father and English with everyone else. Although she knew that her father was fluent in both languages, Hildegard preferred to converse with him in the language they had always spoken with one another. At 11 years, however, she began to demonstrate a strong need to conform to the language patterns of her friends and was reticent about speaking German. Once, she even annoyedly requested that her father not speak German in the streets during their walk together (Leopold, 1949).

Eva at 6;5, unlike Hildegard at the same age, preferred to speak the language of the country in which she was living. When the family moved to Geneva, she insisted on learning French and even spoke it to her parents when they addressed her in her native language, Hungarian. When the family returned to Hungary, the reverse occurred: she refused to speak French and concentrated on recalling Hungarian. She even confided in her doll that once she forgot French, she would be able to speak Hungarian much better. With her parents, she refused to speak French above a whisper, although it had become the stronger of her two languages, and she warned them not to talk in French too loudly for fear that they would draw attention to themselves.

Homer, on the other hand, did not insist on speaking English to the exclusion of Assiryian when he moved to the States--at least not during the study. The language he selected for communication varied according to the people involved in the conversation. His willingness to use either English or Assiryian may have been influenced by his family and their friends, who, able to speak fluently in both languages, frequently switched from one to the other to include everyone in their conversation. This may have been the reason why Homer did not reject Assiryian in favor of English and why he readily drew upon one of the two languages to match the language preference of his audience.

Suspension of Language Preference

Even the preferred language may be temporarily suspended in favor of the learner's stronger one during moments of frustration or anger.

When displeased, Eva would shout "disgusting!" in Hungarian, marking one of the few occasions she put her native language to use in Geneva. Homer verbalized threats in Assiryian (marking one of the rare occasions he spoke Assiryian to Americans) when his playmate, Mark, provoked him. Usually this was only after Mark had pushed him to the limit. Rarely were these threats acted upon, but the mere expression of them seemed to serve as a stop-gap measure as Homer released his anger.

Mark: Stupid, now quit messing up my things.
Homer: (in Assiryian) Now, I'm going to swear at you, and now I'm going to throw this.
Mark: I'll get you.
Homer: (in Assiryian) This is a real gun. I'm going to hit him with it.

Language preference may also be suspended when the learner needs to explain verbally a word or phrase he has not understood. Such was the case one afternoon while Homer and Mark were constructing block towers. Mark demanded that Homer quit building his towers "so tall." Unable to decode the message, Homer asked Mark what "so tall" meant (which Homer pronounced "sulta"). Rather than explain what he meant, Mark only reasserted his demand:

Mark: Quit making it so tall!
Homer: What is this sulta! (frustrated and angry) What is this sulta?
Mark: Don't make it so tall.
Homer: What is this sulta? (talking to himself)

Receiving no explanation beyond that of a repeated command, Homer proceeded to explain to himself in Assiryian what "sulta" really was--there was no such thing:

Homer: (in Assiryian) I ask what sulta is. He says sulta is something. I say there's no such thing as sulta.

Sometimes Homer wove stories in Assiryian around words Mark had used in his speech. Perhaps this was his interpretation of Mark's utterance or maybe merely an entertaining language game. When Mark spoke of spacemen on space vehicles, Homer devised this story in Assiryian and offered it as an explanation to himself for what Mark was talking about:

Mark: I need these for the spaceman on the space vehicle.
Homer: (in Assiryian) Mark says that he lived in space. Let's go to Los Angeles.

When his sister asked him later if he knew where space was, Homer replied that he thought it was somewhere on the other side of Afghanistan.

Language Mixing and Switching

Most studies of second language learners and bilinguals contain data on switching and mixing, that is, the simultaneous appearance of two language systems in discourse. However, researchers have been unable to successfully predict when mixing will occur or explain why it occurs. From the studies to date, it is clear that there is no single explanation of the phenomenon. It may be a communication strategy used only under certain circumstances, or it may be a learning strategy. The only time we find widespread indiscriminate mixing (mixing without consideration given to the listener's language preference) is with young children learning two languages simultaneously.

In some cases, mixing has little to do with an impoverished vocabulary. On the contrary, Johnston (1972) has shown how mixing language codes enriches a conversation when both speakers are bilingual. Haugen (1953) even contends that mixing is inevitable when there is a group of bilinguals, a belief further supported in studies by Lance (1969) on Spanish-English bilinguals and those by Uyekubo (1972) on Japanese-English bilinguals.

Uyekubo contends that Japanese-American children can and do separate language codes and frequently switch languages to enrich their speech as well as practice language courtesy. Children in Culver City also practiced language courtesy to their Spanish-speaking teacher, "helping her out" by inserting Spanish words into English phrases. Homer, too, practiced language courtesy when speaking English with his mother, but in a different manner. Because her English was heavily accented and was not as fluent as his, Homer imitated her Assiryian accent in hopes that she would find it easier to understand his English.

Even when language mixing appears to be the sign of an impoverished vocabulary, there is evidence to suggest that it is not always an unsolicited intrusion, but that the learner can control the amount and nature of the mixing. Ricardo, for example, inserted Spanish words into his English phrases while speaking to his observer, Butterworth. However, these inserted words were usually Spanish nouns which Ricardo thought might have English cognates. Mixing occurred then on the basis of his knowledge about the two language systems and the experiences which told him they were rich in cognates. Moreover, Ricardo knew that Butterworth spoke some Spanish, which further increased the likelihood that he would understand the inserted Spanish words.

A similar phenomenon occurred with Paul, who practiced what Huang calls "geographic switching." He never used Chinese at school among his English-speaking friends, but outside school he inserted Chinese into his conversations with Huang (himself a native speaker of Chinese) when he could not say something in English. These examples show that mixing may be the manifestation of an impoverished vocabulary; however it may also be a deliberate choice the learner makes

based on the language background of the listener and his knowledge of the similarities and differences between the two language systems. This may explain why Paul never tried to mix Chinese with his English-speaking peers.

Aside from enriching a conversation and facilitating communication, mixing can be a language-learning strategy. At least, this was the case with Eva, whose language learning began as a process of relexification. When she moved to Geneva, Eva substituted French words for their Hungarian counterparts in her sentences, while using Hungarian as a reference language for interpreting French phrases. At that time, she also insisted that her bilingual parents provide her with direct translations in Hungarian for French words or phrases she did not understand.

While Eva mixed French and Hungarian in the same sentence, she did not confuse the two languages. Mixing was more a means by which she could use all the French she knew yet still completely verbalize a thought. Gradually, Hungarian ceased to function as a reference point and substitute for her emerging French, so that if she did not know the appropriate expression in French, she would not substitute a Hungarian expression in its place. Instead, she would ask how such an expression should be said or would omit it altogether from her phrases. When she reached this stage, she no longer insisted that her parents provide direct French to Hungarian translations for her, and by the end of her sixth month in Geneva, Eva's French began to emerge as her dominant language.

The reverse of this process occurred when Eva returned to Hungary. There, Hungarian words were introduced into her French phrases with increasingly greater frequency until French ceased to be a reference language. Hungarian emerged as her preferred language and once more the one that she spoke better.

The same process of relexification as a learning strategy has been observed in the speech of Anglo children learning Spanish in the Spanish Immersion Program in Culver City (Cathcart, 1972). Hatch (1972) is quick to point out in her description of these production patterns that language learning is not merely a process of relexification, for children do acquire two distinct language systems, each with its own linguistic features and cultural overtones.

When children are raised bilingually, mixing occurs regardless of the audience. Leopold (1954) contends that infants exposed to two languages from the outset will first weld the double presentation into one unified speech system. Until the age of three years, Hildegard did not select her vocabulary on the basis of the person addressed, because her two languages, English and German, did not yet belong to two different speech systems. Swain (1972), in her study of English-French bilinguals, has also mentioned that the young child is unable to separate languages, while Christian (1972) has written that her 2;6-year-old daughter spoke Gujarati to English-speaking children.

Padilla and Liebman (1974), however, claim that the Spanish-English bilinguals they have studied appropriately identified both languages as young as 1;5 years. What this suggests is that the ability to separate two language systems varies with the learner and his environment.

Summary

Although the learner may demonstrate a language preference, it is not uncommon for the speaker of two languages to switch and mix for a number of reasons. As Hatch (1972) suggests, switching and mixing may occur because manipulating two languages enriches conversation and provides a sense of community with other bilinguals. Mixing may also be a form of language courtesy to the listener. Although learners may mix because they lack the appropriate words in one language, mixing can also be more of a communication strategy mediated by the languages involved and the language background of the person addressed. Mixing may also be an initial learning strategy, as the learner inserts as many words as he can of the target language into the structure of his dominant language. The only evidence we have of widespread indiscriminate mixing is in the data of very small children in the earliest stages of growing up bilingually.

Social and linguistic variables play a major role in language learning and language choice. There is also much to be learned about language acquisition from a functional analysis of the learner's speech. Such an analysis will be the topic of chapter 5.

CHAPTER 5

THE FUNCTION OF SPEECH IN DISCOURSE

What's this?, or some variant thereof, is usually the first wh-question pattern acquired by both first and second language learners (Brown, 1973; Hatch, 1974). Linguistically, it is a relatively simple form to learn, but a more important factor in determining its acquisition is functionality. The learner develops an early interest in naming objects in his environment, and What's this? is learned to solicit new information. It is also the stimulus for very simple discourse patterns where the adult asks for information the learner can supply. This type of discourse is mutually pleasing to both child and adult, as it provides an opportunity for the learner to rehearse the names of objects he knows. Such exchanges are commonly found in the data collected on young first and second language learners.

In addition to being simple to learn and serving as a pleasing discourse routine, What's this? is a question frequently asked by both first and second language researchers who are trying to collect data from their subjects. This, too, may be a reason for its early appearance in our studies.

While it is true that What's this? is a pervasive formula in the speech of the young learner, it is not true that it functions only as a request for information about a referent. As used and interpreted by both learner and parents (or investigator), its function may extend beyond that of simple NP identification. This factor becomes apparent when the function of the question pattern in Homer's speech is examined.

Semantic Function of What's This? and Its Various Forms

Homer extended the semantic range of the wh-pattern and its various grammatical forms well beyond simple NP identification. In addition to using it as a question form to ask the names of referents, he produced it to give commands, seek direction, and claim possession. Some examples of these functions are listed below:

1. Identification

   a. Homer: What is your name?
      Elmer: Elmer.
      Homer: What this is Elmer. [=This is Elmer] (The glosses represent a possible linguistic structuring of Homer's meaning.)

   b. Homer: What this is? [=What is this?]

In the examples above, Homer used the wh-pattern to solicit information about the names of people (1a) and objects (1b) around him. (Homer's own wh-pattern will be discussed in chapter 7.)

2. Direction Seeking

a. Homer: What this is?

Homer used this utterance while filling up a plastic bottle with sand for a playmate. At the time, they were both in the sandbox digging up earth, piling it on a toy truck, and then carting it away. Homer was not asking for information about the object here, but was asking about the task he had been requested to perform. Literally, What this is? could have meant any number of things, including What are you doing?, What are you going to make? or What do you want me to do? Homer's playmate responded to the question as if Homer had asked for directions for what he should do by saying, "Fill it all up. That's enough Homer. This is gonna be hard."

3. Command

a. Homer: What is it tunnel! [=Stop pushing sand in my tunnel!]

Homer was extremely annoyed with a boy at school who insisted on pushing sand into his newly created tunnel. Here (3a) Homer was not asking for information about tunnels, but rather was telling the boy to leave his tunnel alone. In this case, the child interpreted Homer's utterance too literally, failing to account for the context in which it was uttered as well as the angry tone in Homer's speech. His response to Homer's shouting was, "There's a tunnel," as if Homer had wanted to identify the meaning of the word. (The response may have also been made to further provoke Homer, although it seemed to be a sincere misinterpretation of his utterance.)

b. Homer: No! What this is Homer!

Homer shouted (3b) in response to the command, "No, Homer. Stay outta here." Homer refused to leave and responded with a phrase that could be interpreted as I'm not going to leave or I'm Homer, and you can't tell me what to do. The force behind the statement was much greater than simple NP identification.

4. Demand

a. What is this this is! [=Give me that truck.]

Give me that truck! is the closest meaning we can suggest for utterance (4a). The boy who had grabbed Homer's truck also decoded the utterance in this manner, for he tightened his grip on the toy and adamantly refused to relinquish it until the teacher requested him to do so.

The reason for Homer's extending the meaning of What's this? beyond a simple NP identification question was most likely related to the fact that as a second language learner, he had not yet acquired the linguistic means to express ideas that his mind was capable of generating. When circumstances at school pressured him into verbal expression, Homer chose to produce an English pattern instead of speaking Assiryian. With an English phrase he was that much closer to communicating with other English speakers. Nevertheless, tone, context, and gestures carried the force of his utterances.

While Homer extended what's this? to fill in linguistic gaps in his language, there is evidence from first language data that young children also extend the function of this wh-pattern for other reasons.

Wh-Patterns in the Speech of First Language Learners

Holzman (1972) using Brown's data on Adam, Eve, and Sarah has found that What's dat? functioned in at least three distinctly different ways for all of the children:

1. What's that? was used when the child actually wanted the object he was asking about. In these cases it meant, Give me that.

   Adam: What dat?
   Mother: No, not that one.
   Adam: Okay.

2. What's that? was used when the child wanted to play the naming game: the adult asks him the names of objects in the room, a popular game for young learners.

   Eve: What's that?
   Researcher: What is that?
   Eve: That zebra.

   This was not a sincere request for information, for when the question was turned on Eve, she answered it (Holzman, 1972).

3. What's that? was used when the child sincerely requested information about the name or nature of an object.

Like Homer, Adam, Eve, and Sarah produced What's this? to request information about an object. Likewise, they enjoyed naming objects for the mere pleasure of succeeding at a naming task. While the use of What's that? in place of I want that suggests that the children lacked the appropriate linguistic structure for the latter, this was not the case. What's that? was substituted as a subtle, more indirect request for something the children wanted. The children could say I want that, but they asked What's that? when unsure if they would be allowed to have the object in question.

Information about the Language-Learning Process

There are two ways a child learns meaning in speech. He may learn it by observing how and when others use a pattern or by noting the response that the pattern elicits from others (Holzman, 1972). As listeners, we often interpret a child's utterance by drawing upon context clues rather than from a linguistic analysis of form and function. Therefore, communication patterns may evolve where an utterance evokes a particular response which has little to do with a linguistic model of function. For example, Adam asks What's dat?, and his mother gives him a piece of candy instead of saying That's candy. Homer says What is this is? and his playmate says No.

It is likely that the learner will use these idiomatic forms until he has reason not to. They will be extinguished when they fail to evoke an appropriate response or when the learner notices a discrepancy between his response and that made by others to the identical utterance. He will then turn to other patterns, which may or may not be just as idiomatic.

Implications for Further Research

As Holzman (1972) states, most of the work to date on the acquisition of interrogatives has been more linguistic than psycholinguistic and more syntactic than semantic. From the study of wh-patterns in the speech of a second language learner and a group of first language learners, we find that What's this? may acquire a number of functions beyond simple NP identification. Homer used the pattern to make demands, seek direction, ask questions, and show possession. Adam, Eve, and Sarah used it to request information, ask for objects, and play language games.

Not only is it important to examine the function of speech in communication between the learner and adult speaker, but it is also essential to examine the function of speech in adult discourse. For example, What's this? has many more implications in adult-adult speech than just simple NP identification. Below are some of the possible semantic functions of the question as well as the types of responses it might generate. This is by no means an exhaustive list.

QUESTION	INTERPRETATION
1. What's this?	2. Why are you giving me this? You shouldn't have gone and bought this for me.
3. Response: Oh, it's just a little something I picked up at the store. I thought you might like it.	

1. What's this!

2. I heard what you said. I can't believe it's true. Give me some more information about it.

3. Reponse: I'm nearly sure of it. I overheard their conversation and...

1. What's this?

2. I object to that kind of language. How dare you talk to me that way!

3. Response: O.K. O.K. Don't get upset. Let me put it another way.

While a functional analysis of What's this? as it occurs in the speech of adults is beyond the scope of this discussion, the point being emphasized is that the grammar of communication is not always the same as linguistic grammar. This is true for adults as well as for children. At some point in our research, we will have to pay more attention to the way speech functions in discourse.

Summary

We find that in Homer's speech and in the speech of Adam, Eve, and Sarah, the function of one language pattern can vary according to the context in which it is uttered. Although this is also true of adult speech, few language studies have attempted to analyze discourse grammar. We therefore have limited models for what the learner knows in addition to limited models of the semantics of speech in adult discourse.

The analysis of form and function is also important in the study of morphological rules. This will be a topic of the next chapter as the form and function of Homer's developing progressive are analyzed.

CHAPTER 6

FORM AND FUNCTION OF HOMER'S PROGRESSIVE

The order in which English morphemes are acquired has been a subject of much recent discussion and research. Brown (1973) pioneered rank-order studies with his analysis of data from Adam, Eve, and Sarah. Of the 14 grammatical morphemes he examined, the progressive was the first acquired by the three children. Researchers in second language learning have recorded similar findings. Hakuta (1974) has found that his subject, a Japanese child learning English, also acquired the progressive before any other grammatical morpheme.

In her study of ten Spanish children learning English, Adams (1973) noted that the progressive was the first marker of aspect to be learned. Using the Bilingual Syntax Measure with 115 subjects whose native language was either Spanish or Chinese, Dulay and Burt (1974) found that the English progressive was [illegible]ned early and that it, too, was the first overt [illegible] aspect. What these studies suggest is that regardless of previous language experience, the progressive is one of the first morphemes to emerge in the speech of children learning English and is the first marker of aspect acquired.

Form of the Progressive

The progressive does not usually appear in speech as a fully marked form. Many children initially affix -ing to the verb stem but omit the required be-AUX (Brown, 1973; Adams, 1973).

Some children, however, produce what appear to be progressive constructions that have the AUX, but not the -ing affixed to the verb. In Sarah's data, for example, there were nine sentences with I'm + verb such as I'm play with it. Cazden (1968) called these forms "reduced catenatives" and suggested they be interpreted as conveying intention, such as I'm going to play with it. Cohen (in press) and Adams (1973) have also found similar constructions in the speech of second language learners. Adams noted that one of her subjects omitted be before going to + verb, and, like Cazden, she suggested that these constructions were "reduced catenatives."

Function of the Progressive

While rank and order studies have provided us with important data on the relative sequence in which morphemes are acquired, there has been little discussion about the function that the progressive serves in a child's speech. In other words, the relationship of form and function in the emerging progressive has not been explicitly defined.

Two explanations may be offered to account for the widespread interest in form relative to the lack of reference to function. The first is that subjects in the recorded studies may have initially produced the progressive in order to add form to a developed semantic notion. If this were the case, the only variable requiring analysis in the data would be (as it has been) the syntactic form of the developing progressive. Secondly, it is possible that we have falsely assumed function to be a precursor of form, so that the semantic role of the progressive in the learner's speech has remained improperly unanalyzed from the onset of its production.

For determining acquisition of a form, Brown's notion of obligatory contexts is widely used; that is, a form must be produced over a two-week period in 90 percent of the contexts in which it is clearly required. Since Brown's model is constructed to measure the relative sequence in the acquisition of morphemic forms, his production criterion of 90 percent is not suitable for an analysis of the process by which function is learned. For a study of function, we should develop a model that uses a different criterion.

This chapter proposes a criterion for a functional analysis of the progressive as it emerged in the speech of one subject, Homer. All progressives were analyzed in the data, whether or not they were accurately produced in appropriate contexts. In other words, the progressive was analyzed in terms of the function it performed in Homer's speech and not judged for appropriateness in form or function. While meaning was being evaluated, three questions were asked:

1. Is there evidence to suggest that the progressive form emerges as a marker of tense or aspect?
2. Is there evidence to suggest that it occurs in semantic contrast with any other tense in the child's speech?
3. Is there evidence to suggest that it emerges as a new form whose adult function is clear to the child?

A simple report of Homer's progressive verb form as it emerged in his speech does not distinguish it from that of other language learners. As with the children studied by Dulay and Burt, Adams, and Brown, Homer's speech production showed early and pervasive use of the progressive morpheme. Its form was also similar to that used by other children: sometimes the AUX was deleted and only the -ing was attached to the verb; sometimes a pronoun with a contracted be was produced, followed by V-ing. While the frequency of the progressive in his speech steadily increased, at no point did Homer achieve a 90 percent accuracy level for this form during the five-month observation period.

More interesting than an analysis of form is an analysis of the function the progressive served in Homer's speech. Homer used the progressive with reference to present, past, and future time periods.

The progressive did not occur in semantic contrast with any other tense in his speech, and, furthermore, it did not seem to emerge as a form whose adult function was clear to him.

In Table 1, it is clear that Homer used the progressive with reference to four different time periods: 1) immediate (going to) intentions; 2) intentions of a more distant future, such as tomorrow, next week or sometime; 3) the past; and 4) activity actually occurring at the moment of speech (process-state activity). In addition to these four temporal references, Homer's progressive functioned 5) on occasion as an imperative. Although situations (1), (2), and (4) are cases in which an adult speaker could also use the progressive, we can not assume that Homer's use of this form was in any way related to tense or to aspect, as situations (3) and (5) are ungrammatical in adult speech.

TABLE 1

Our criterion for labeling the progressive will be the presence of -ing affixed to the verb.

1) Immediate Intention

4/23 I my coming. [=I'm going to come to you.]

5/4 I'm going in to all bees inside. [=I'm going to (go to) all bees inside.] (All bees inside meant the classroom. When the teacher wanted them to come in, she would call, "All bees inside.")

5/10 I'm going and found them. [=I'm going to find them or I'm going to go and find them.]

5/11 I'm taking 'nother one. [=I'm going to take another one.]

2) Intentions of the Distant Future

4/23 I my tomorrow going /in/ beach. [=I'm going (to go) to the beach tomorrow.] (/In/ had no recognizable semantic function. It may have been a repeated segment from "going" and therefore a double nasal.

4/23 I my dad and then going /in/ beach and then airplane and water like that, like that. See, going /in/ water and then swish and then going /in/ water. [=Dad and I are going (to go) to the beach (tomorrow). The airplane will go in the water (tomorrow).] or [=We're going to throw the airplane in the water (tomorrow).]

5/11 I'm going /in/ give it to Mark. [=I'm going to give it to Mark (sometime).]

3) Past

5/10 Mark and Fred going /in/ outside. [=Mark and Fred went outside.]

5/10 I'm playing with that Mark. [=Mark was playing with that.]

4) Process-State (Progressive)

4/22 That's a Misty is going, going in there. [=Misty is going in there (right now).]

5/4 It's a sleeping in there a room. [=It's sleeping in the room in there (right now).]

5) Imperative

5/11 O.K. Sitting down like that. [=Sit down like that.]

Because the progressive referred to all of these time periods, we can conclude that it did not function as a marker of tense or aspect in Homer's speech. In addition, there is no evidence to suggest that the progressive form occurred in semantic contrast with any other tense form. This statement is further supported by Homer's production of verb stems referring to the same time periods listed in Table 1: 1) an immediate intention; 2) a non-immediate future; 3) the past; 4) the progressive and 5) the imperative. Table 2 will provide examples of these forms.

TABLE 2

1) Immediate Intention

4/23 I my go my mother. [=I'm going to ask my mother or I'll ask my mother.]

2) Distant Future

4/23 I come my brother. [=My brother will come (tomorrow).]

3) Past

6/30 Hippies make it. Give it to me. [=Hippies made it and gave it to me.]

4) Progressive (Ongoing Activity)

Misty, Misty go in there with it. [=Misty is going in there with it (now).]

5) Imperative

5/11 O.K. Sit down over here. Sit down, Judy.

There is nothing in the data to suggest that Homer perceived the relationship between the adult form and its function or selected one verb form over another in an attempt to mark tense. Homer's patterns occurred in semantic free variation, indicating that he had not yet learned the semantic parameters of form. Going, go, I'm go, I going, and I go functioned as a single semantic unit, meaning movement from one place to another--now, yesterday, or tomorrow.

Table 3 provides further evidence supporting the theory of free variation. It contains examples where two different forms of the same verb referred to identical time periods in Homer's speech. All of these utterances were produced either in succession or in very close proximity in Homer's speech.

TABLE 3

1) Immediate Intencions

I my coming. I my go my mother. [=I'm going to come to you. I'm going to (ask) my mother.]

2) Distant Future

I don't know Fred a my going, no go. I don't know coming, go. [=I don't know if Fred is going or isn't going. I don't know if he's coming or going.]

3) Past Tense

I'm find it. Bobbie found one to me. [=I found it. Bobbie found it for me.]

4) Progressive

Misty, Misty go in there. Hey Judy, Misty going in there. [=Misty is going in there. Hey Judy, Misty is going in there.]

5) Imperative

O.K. Sit down over here. Sitting down like that. [=Sit down over here. Sit down like that.]

To summarize what has been proposed so far, syntactically, Homer's progressive developed in a manner similar to that of other children in first and second language studies. Semantically, however, it was not a predictable marker of tense or aspect. It did not contrast

with any other tense in his speech, and there is no reason to believe that Homer had analyzed its true function in adult grammar.

Reasons for the Progressive's Emergence

Speculations on the cause of the early appearance of the progressive in Homer's speech produce interesting explanations of the process of language learning. We could say that Homer was actually testing different verb forms to discover tense limits. However, this explanation is weak in view of the fact that Homer did not use any other time markers in his speech--adverbs or verb affixes--when the progressive emerged. Furthermore, the progressive emerged long before he was asking wh-time questions or responding to those asked of him. The entire concept of time appeared to be unimportant while he was beginning to gather and sort through language data. One might also suggest that Homer was cognitively immature and therefore unable to conceptualize the relationship between syntax and tense. However, we can quickly dismiss this hypothesis since Homer appropriately marked time in his first language.

With the elimination of theories of rule testing and cognitive maturity, we can concentrate on alternative suggestions that may provide a more accurate explanation for the development of Homer's progressive.

Slobin (1973) and Hatch (1974) suggest that perceptual saliency is a language universal important to the acquisition of new forms and that morphemes affixed to the ends of words are the most conspicuous in speech. In addition to being a salient morpheme lacking conditioned phonological variants, -ing occurs at the ends of words. Morphophonemically, it is the easiest affix to learn.

Another important consideration is the frequency with which a form occurs in the learner's environment. The progressive is one of the most pervasive forms in the speech environment of a child. In Brown's count of parental speech samples (1973), the progressive ranked highest in verbal inflections for Eve's parents and second highest in samples from Adam and Sarah's parents. Legun's (1969) study showed that the progressive was the most frequent verb form in the classroom language of kindergarten through third grade.

From this information, we can outline four characteristics of the progressive which are largely responsible for its early appearance in the acquisition of English morphemes: 1) the -ing morpheme is easily recognizable; 2) it is a frequently occurring form in speech; 3) it is phonologically stable; and 4) morphophonemically, it does not affect the base verb form to which it is attached. These features may account for the early production of the progressive pattern.

Reasons for Free Variation

Although the form is easy to produce, the semantic function of the

progressive as it occurs in adult speech is quite complex. Depending on included adverbial time markers or a mutually understood context, it denotes 1) process-state activity; 2) activity of the immediate future; and 3) non-immediate future events. For example:

1. I'm walking to the beach. (A statement made upon meeting a friend while on your way to the beach.)
2. I'm driving, even if I did forget my glasses. (The immediate future.)
3. I'm walking to the beach next Tuesday. (Non-immediate future.)

In addition to marking process-state activity and various future time periods, the progressive can refer to past events of duration. In such cases -ing still remains affixed to the stem, while the AUX changes to either was or were, depending on the subject.

An analysis of Homer's speech suggests that the progressive first emerged as a new verb form but not as a new verb function. Explanations for its early development are the frequency of its occurrence in speech, its perceptual saliency, its phonological consistency, and the manner in which it preserves the phonology of the stem. However, it emerged at a time when Homer was uninterested in marking time and when the semantic function of the progressive was difficult for him to analyze.

Comparison between Homer and First Language Learners

When comparing Homer's acquisition of the progressive to first language learners, we find that the form emerges early for both learners and--structurally, at least--in the same manner. This is probably due to the linguistic features of the progressive which make it relatively easy to perceive and produce. Moreover, it is a pervasive form in the learner's environment. While there are similarities in both the shape of the progressive and its early appearance, there is a difference in the function it served for Homer compared with its function in the speech of first language learners. Brown (1973) found that first language learners use the progressive to mark process-state exclusively. Even by the study's end, Brown's subjects had still not mastered all of the functions of the progressive. Homer, on the other hand, produced the form with reference to at least four temporal modes.

One explanation for this difference in function is that since first language learners are restricted to their level of cognitive development, they are only able to conceptualize process-state activity at the onset of their production of the progressive. Therefore, there is no possible way for the function of the progressive to be overextended in their speech. Homer, on the other hand, was already mature enough to conceptualize semantic relationships that the Brown children had not mastered at the end of Brown's data collection.

The emergence of form prior to function in Homer's speech may have been due to the fact that his ability to recognize and produce language patterns outstripped his ability to perceive relationships between form and function. Homer was able to refer to all time periods in his native language, yet he lacked the necessary information about English to link its form to its function. Because he was able to recognize similar phonological patterns in his speech environment, however, he grouped these together into one semantic class from which he drew indiscriminately. For example, he knew that I my, I'm, and I am all belonged to the same general class, and he used them in free variation when referring to himself.

It seems likely that Homer's progressive emerged by the same process: it was a phonological variation of the stem, containing no distinguishing semantic features of its own. For Homer, all verbs denoted action only, whether they occurred in the present tense or past. Later he would discover the range of qualitative semantic differences between the possible forms for each verb; in the initial stages of language learning, he would group according to sound. Thus, I going, I'm go, and I'm going were grouped together as having one semantic function: Homer's movement from one place to another.

Summary

Although we know that Homer's progressive did not emerge with a semantic function that distinguished it from any other verb form, the emergence of a linguistic form prior to its function has not been treated in the data on second language learning, nor has the question of function been fully explored in first language research. Is the utterance I'm go, for example, really a reduced catenative, or could first language learners be grouping this together in their speech with forms such as I'm going and I going to perform a more general function? The analysis of both the form and function of all verbs, regardless of their appropriateness for a given context, could help to uncover more about the language-learning process and how that process may be similar or different for first and second language learners.

While a description of the language process is the ultimate goal of language researchers, we still have very little information about how the learner formulates his rules, shapes them, and acquires new rules. While it seems that these questions will lead us deeper into the fields of neurolinguistics and psycholinguistics, we still have resources available in language data collected from experimental and observational studies with which to form some hypotheses. By looking at dialogues between Homer and native speakers, for example, there is evidence to suggest that one of his strategies for processing language involved incorporation rules, where the language addressed to him became incorporated into his own speech. This, as well as the strategy of imitation, will be discussed in the following chapter.

CHAPTER 7

IMITATION AND INCORPORATION RULES

Imitated Speech

Homer imitated the speech and behavior of other children. His best friend, Mark, had accused him of being a copier just two weeks after his arrival in Los Angeles. "Don't copy!" Mark warned as Homer successfully recited a full sentence of Mark's. Unintimidated, Homer shouted right back, "Don't copy!"

At nursery school, Homer gave himself away the first week when, during art period, he copied the picture the girl beside him was drawing. This could have passed unnoticed had the teacher not requested that the children put their names on their pictures. Homer's neighbor neatly printed SUSAN on hers; Homer neatly printed SUSAN on his. Thus, it was apparent that one strategy Homer was using to adapt to his new environment was that which Mark called copying, but which language researchers call imitation.

It is true that children do imitate the speech they hear. This may be a way to commit an unanalyzed pattern to memory for some kind of future analysis or it may be a communication strategy where a response is learned which can later be applied to a similar context (Hatch, 1972). Imitation may also give the learner a sense of participation in the conversation, or it may even be a successful teasing strategy, as Homer discovered. Finally, not to be overlooked is the fact that imitation can be sheer fun.

Imitation in Homer's Speech

One of Homer's most interesting imitation strategies was his response to yes/no questions. If his answer was affirmative, Homer imitated the question's syntax but changed the direction of the intonation from a rising to a falling pattern. Some examples are listed below:

J: Is Mark at school today?
H: Is Mark school today. [=Yes, Mark is at school today.]
J: Is Misty a cat?
H: Is Misty a cat. [=Yes, Misty is a cat.]

Occasionally he included the affirmative marker, yes, in his response, usually after the copula.

J: Is it good?
H: Is it yes good. [=Yes, it's good.]

Negative responses were generated in the same manner with the inclusion of the particle no somewhere after the copula.

J: Is this happy birthday?
H: Is no happy birthday.
J: Is this lemonade?
H: Is no lemonade.
J: Is Homer a cat?
H: Is Homer is no. [=Homer isn't a cat.]

This pattern generalized to statements which were not made in response to a previous yes/no question. It also extended to his own yes/no questions. If one were only analyzing yes/no question formation at the time, it would have appeared that he had learned the appropriate inversion rules.

1. J: Got ya.
   H: Is no got ya. [=Don't grab me.]
2. H: Is it bicycle is Judy? [=Is it Judy's bicycle?]
3. Is it Misty?
4. Is Homer. Is something. Is Homer, OK? [It's Homer. I have something for you, OK?]

This resembles the strategy for question formation used by first and second language learners. Questions are initially formed by maintaining SVO word order and changing the direction of the intonation from a falling to a rising pattern. The result is a question such as This is house? or You want ice cream? Although Homer's sentences contained VSO patterns, his language strategy--simplification--was the same.

When looking at the input data for Homer during this period, it is easy to see why his rules developed the way they did. Most of the input was in the form of yes/no questions beginning with the copula, is. Homer, at this point, just one month after his arrival, had still not sorted out word order rules; however, he did recognize question and statement intonation patterns. Therefore, he merely reversed the direction of the intonation pattern for affirmative statements and inserted no when the statement was negative. For questions he used the same word order but with rising intonation.

Incorporation Rules in Homer's Speech

We do not know to what extent imitated speech is analyzed by the child. It is clear that there is no transfer of rules between some imitations and subsequent free speech patterns. For example, a learner may say My name is Homer in one breath and He Fred in the next, the former being a memorized pattern and the latter the learner's own rule.

While researchers have noted large amounts of imitated speech in their data, it is also true that learners create linguistic rules

which systematically approach an adult model of English. During this process, it has been thought that the learner is constantly producing patterns he has never heard before. Such notions may have to be qualified when the total language environment of the learner is examined--input as well as output data.

Traditionally, language research has been organized around the sentence structures produced by the learner and, in a relatively few cases, the sentences produced by the parents or investigators in the study. The latter have been primarily analyzed for effects of frequency (Boyd, 1974; Hatch, 1974; Brown, 1973), and for the effect of parental expansions on the learners' rule formation (Cazden, 1965). While the frequency of a structure combined with other linguistic variables has been shown to influence what the learner acquires (Hatch-Gough, 1974; Boyd, 1974), there has been little research on dialogue patterns and their subsequent impact on the process of rule formation.

An analysis of portions of the dialogues between Homer and native speakers of English reveals that the shape of Homer's utterances is influenced by the patterns addressed to him and that some of his linguistic rules are combined question-response patterns in discourse agreement. In other words, some of Homer's production strategies involve incorporation rules whereby the speech he hears is incorporated into his own language.

Sometimes he immediately incorporated a pattern into his utterance:

1. Mark: Come here.
   Homer: No come here. [=I won't come.]
2. Mark: Don't do that.
   Homer: O.K. Don't do that. [=O.K. I won't do that.]
3. Judy: Where are you going?
   Homer: Where are you going is house. [=I'm going home.]
4. Judy: Where's Mark?
   Homer: Where's Mark is school. [=Mark is at school.]

Sometimes a pattern was not immediately incorporated into the next utterance, but was stored for later incorporation.

1. Ed: Which one?
   Homer: I'll show you.
   I'll show you is that one.
   Which one is that one.

Sometimes a phrase was imitated in isolation before being combined with any other words:

1. Judy: What is it?
   Homer: Aesb. [Assiryian for horse]
   What is this? What is it? What is it?
   What is it Jennifer. [=This is Jennifer.]

Homer's most pervasive language rule involving incorporated speech was his wh-question pattern, based on the question What is this? and its response, This is noun. The pattern will be analyzed in detail below.

Incorporation Rules for Wh-Patterns

During a 4-week period, from 1/26 to 2/26, Homer produced a number of wh-patterns which looked like these:

1. What is this sulta?
2. What is this truck.
3. What this is Homer.
4. What this is?
5. What is this is?
6. What is this is doot. [a word made up by Mark]
7. What is it?
8. What is it Jennifer.

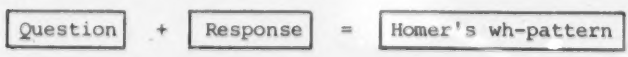
Linguistically and semantically, these phrases differed from adult wh-patterns in at least three ways:

1. The question word what was attached to all phrases, regardless of Homer's intention to pose a question or make a statement.
2. The position of be in the sentence varied, but not in a predictable manner. Sometimes, be preceded the subject; at other times it followed. However, semantic interpretation of the sentence was not dependent on word order, but rather on context (see chapter 5).
3. Sometimes either is or this occurred twice in the same utterance without altering the meaning of the sentence.

Upon examining the nature of the input language addressed to Homer, it becomes clear that his wh-patterns were products of a wh-question and its response in discourse agreement. (I will borrow Miller and Ervin-Tripp's [1964] broad definition of discourse agreement: a question requires a response. Although there are class and verb restrictions placed upon this formal relationship, our interests lie only in the semantic restrictions of discourse agreement. That is, the information required by a what question is different from that requested in a why or where question, and this difference must be respected in the dialogue.)

The process by which Homer produced these wh-patterns is as follows:

1. Homer juxtaposed syntagmatically related units of social discourse--a question and a response pattern--thereby creating his own wh-pattern:



What is this? This is truck = What is this this is truck.

2. Paradigmatically related units within these two juxtaposed phrases were deleted.

   Homer's wh-pattern + Deletions = Homer's new utterance

   What is this this is truck. [Deletion of this is] = What is this truck.

   What is this this is truck. [Deletion of is this] = What this is truck.

3. Deletions were randomly applied:

   a. Is this was deleted. If this were the case, the amalgamated pattern What is this this is NP became What this is NP.

      Examples: What this is Homer.
      What this is tunnel.
      What this is airplane.

   b. This is was deleted, and the pattern became What is this NP.

      Examples: What is this airplane.
      What is this fruga. [Homer's version of the Persian word for airport]
      What is this screaming.

   c. Only this was deleted, which shaped the utterance into What is this is NP.

      Example: What is this is car.

   d. Homer deleted the NP and either is this, this is or this when asking a question.

      Examples: What this is?
      What is this?
      What is this is?

Scollon (1974), while studying the language development of a child simultaneously exposed to English, Hawaiian, Creole, and Japanese, noted that the manner in which she constructed her phrases was largely influenced by the nature of the language addressed to her. He has concluded that research on language development should include an analysis of the structures in the input data. In other words, we should extend the data for analysis beyond single utterances produced by the child. Such an extended analysis will result in a more realistic appraisal of why a pattern has been produced, which in turn will provide us with more information about the learning process.

Ruth Clark (1973) found that the data she collected on her son, Adam, while he was learning English as his first language, is rich

in incorporated speech. She claims that Adam's earliest two-word sequences were juxtapositions of words mediated by situations. She also argues that children's speech becomes creative through the analysis of the internal structure of sequences which begin as pre-packaged routines, incorporated from the adult's speech before being internally analyzed. Greenfield (personal communication, 1975), too, has seen this same process strategy operating among first language learners who are still at the two-word stage of their language development.

Summary

What these speech samples reveal is that patterns which appear to be highly creative and based on a set of internalized language rules may in fact be patterns from dialogue sets that the learner has lifted from his environment. Homer's wh-question formation, for example, was based on the combined question-answer pattern in social discourse.

These incorporated patterns tell us something about Homer's process strategy for language learning: the rules for both wh-questions and statements were derived from discourse patterns. Homer was focusing on and processing much more than isolated sentence units in speech. Instead, he was sorting through and storing linguistic information he received in language dialogues. This was particularly noticeable in Homer's speech because he was a second language learner and was able to store long utterances. However, this strategy has also been observed in the speech of first language learners as early as the two-word stage.

Therefore, a closer analysis of the dialogue between learner and adult may reveal more about the nature of rule formation than a simple sentence analysis of the learner's speech. Such a conclusion echoes the observation made by Roger Brown in 1968:

> It may be as difficult to derive a grammar from unconnected sentences as it would be to derive the invariance of quantity and number from the simple look of liquids in containers and objects in space. The changes produced by pouring back and forth, by gathering together and spreading apart are the data that most strongly suggest the conservation of quantity and number. The changes produced in sentences as they move between persons in discourse may be the richest data for the discovery of grammar. (p. 288)

Evidence of incorporation rules suggests that an analysis based on a transformational-generative theory is not comprehensive enough to explain the process of rule formation. This subject will be discussed in the next chapter.

CHAPTER 8

INCORPORATION AS A BASIS FOR RULE FORMATION

Transformational Theory of Wh-Question Formation

In 1965, Klima and Bellugi described the development of question forms in the speech of the three children studied at Harvard--Adam, Eve, and Sarah. In their analysis they collected the questions posed by each child and found that, allowing for some overlapping, they fell into three successive developmental categories. In Stages 1 and 2, there are four distinct characteristics of the question patterns: 1) the most frequent wh-question words are what and where, and both appear at the head of the sentence; 2) there is no do support; 3) there are no internal inversion rules; and 4) tense is not marked. Questions occurring in the speech of Adam, Eve, and Sarah during Stages 1 and 2 generally look like the following examples:

Where Ann pencil?	What the dollie have?
Where horse go?	What book name?
	Who that?

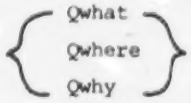
In data Hatch (1974) synthesized from over 40 observational studies on second language learning, she found that she could outline a similar pattern for wh-question development: 1) the question word, usually what, who or where, first appears at the beginning of the sentence; and 2) wh-questions are asked before the copula has been developed, before tense has been marked, and prior to the introduction of do-support. Thus, the first wh-questions in the speech of those learning English as a second language look remarkably like those produced by children learning English as a first language.

From the studies of Hatch, Klima, and Bellugi, we can conclude that the developmental process of wh-question formation produces imilar wh-patterns in both first and second language learners: 1) there is neither do-support nor internal inversion at the onset of production; 2) wh-question words first occur in the initial position of the sentence and 3) wh-questions are produced before the copula is developed and before tense is acquired. Thus, the sequence of wh-question development is similar for those learning English as either their first or second language.

Having described this sequence, a more interesting question to explore is whether the process of wh-question formation is the same among all learners of English. There are least two theories to be further explored, and they are described below.

Klima and Bellugi have described the process by which Adam, Eve, and Sarah acquired wh-question patterns according to the rules of transformational-generative grammar. They treat each utterance as a single sentence unit consisting of a nucleus to which a wh-question marker is preposed. The formula outlining the rules

of wh-questions at Stages 1 and 2 is included in their report:



Homer's Rule Formation

This explanation is not generalizable to Homer's question development. His patterns evolved from a process quite different from that of the application of rules to a single sentence nucleus. As has been discussed, Homer's patterns were products of juxtaposed sentences in his speech, resulting in sentences like What this is Homer! and What is this sulta? While neither of these phrases resembles those recorded for other first and second language learners, the wh-patterns collected after 2/26, Homer's second month in the United States, are similar to those described by Hatch, Bellugi, and Klima. These form the real basis from which to question Bellugi and Klima's interpretation.

If we examine the wh-questions in Homer's speech after 2/26, we find that they, too, resemble those of both first and second language learners described: 1) what occurs at the head of the sentence; 2) there is no do-support; 3) the copula is not developed; and 4) tense is unmarked. Furthermore, what functions only as a question marker, so the wh-question pattern no longer doubles as a statement form. Sentences like these were produced by Homer after 2/26:

1. Judy: Homer, draw a tree.
   Homer: What draw a tree? [=What does Draw a tree mean?]
2. Homer: What takta? [=What is the translation for takta in English?]
3. Ed: What am I?
   Homer: What what am I? [=What does What am I mean?]

Assuming that Homer's language-processing strategies did not change significantly, it is possible that What draw a tree? is derived from the same process responsible for What is this truck? or What this is Homer. That is, What draw a tree? is a product of two separate sentence units: 1) What? (formerly What is this?) and 2) Draw a tree. Had Homer produced these same questions during the first month of his question development, they would have probably looked like this:

1. What is this draw a tree? or What this is draw a tree?
2. What is this takta? or What this is takta?
3. What is this what am I? or What this is what am I?

After 2/26, Homer may have substituted the question form What? for What is this? assuming, by his general interpretation of the two forms, that they were paradigmatically related. At least this

seems like a possible suggestion since he used both What? by itself and What is this? to ask for clarification of something he did not understand. It is also possible that Homer recognized the paradigmatic relationship that exists between This and Draw a tree, noting that one could replace the other.

Considerations for Rule Development

In trying to account for wh-question development, we have discussed two divergent explanations. Bellugi and Klima couch their explanations of this process in terms of transformational-generative grammar, assuming that wh-question patterns stem from a single sentence nucleus to which transformations are applied. I suggest that Homer's wh-questions reflect a process whereby sentence units are juxtaposed and modified by vertical substitutions and deletions.

The evidence available, however, is not strong enough to support one theory over another. In Homer's data from 1/26 to 2/26, there is very clear evidence to support the theory of juxtapositioning. This same theory can be extended to later sentences by assuming that juxtapositioning continued to be a major process in his language development. Therefore, we can interpret What takta? to be a product of two juxtaposed sentence units just as we showed What this is truck to be.

In the speech of the Harvard children, there is supporting evidence for either theory, that of Bellugi-Klima or that which I am proposing here. At the same time, there is not enough substantial evidence to discredit either. In other words, by looking at a sentence of the Harvard children, such as What the dollie have?, we can describe the process strategy by either theory: juxtaposing rules or transformation-generative rules. We could say that this question is a product of two juxtaposed units, What is it? + The dollie have (something). Or, we could say that What is preposed and replaces the unknown object of the sentence.

Summary

In the final analysis, we cannot claim to have uncovered any single explanation for the development of wh-questions. Juxtaposing does appear to play a role in the language process, but because of limited data, we can not justify claims that it is responsible for question development among all language learners. Although the utterances of the Harvard children may be interpreted as juxtaposed units, they may also be analyzed as single sentence nuclei with fronted wh-question words. Such flexibility strengthens the position of neither theory but leaves the possibility open for more than one explanation of the data.

From Homer's data, at least, it is apparent that he did attend to discourse sets, which in turn influenced his own sentence formation. An analysis of discourse patterns in the data on other learners may provide valuable information about processing and production strategies in language development.

CHAPTER 9

CONCLUSION

When immersed in a new community, a child is usually motivated to learn its language. This may be in order to make friends, protect territory, or to gain social status. The learning process involves a blend of variables which makes the linguistic structure of language more or less accessible to the learner. Certainly, frequency of a form in the input is very important; however, as Hatch (1974) contends, frequency is modified by a blend of other variables: the form's perceptual saliency and semantic load, the stress it receives in the sentence, and the number of functions it performs in speech. These, too, operate in first language learning, which further supports Slobin's theory of language-free process strategies.

We have learned that the term "immersion" may be misleading when describing the nature of the language-learning experience for young first and second language learners. All of the available data from our observational studies contain evidence of language filtering, which is sometimes in the form of sequenced language lessons in the input to the child. This may ultimately simplify the learning task, as the child need not sort through as much linguistic data for comprehension and rule formation. Such pervasive filtering and sequencing were not found in the input to an older learner. It is hypothesized in this report that this made the task of learning a new language more difficult for him.

When operating with two language systems, the learner must choose the language he will speak for any given speech act. Some learners only speak the language of their peer group, while others practice language courtesy by switching languages, depending on the person addressed. Bilinguals may also mix and switch codes in order to enrich their conversations. Sometimes mixing occurs because the learner lacks the vocabulary he needs in the target language. However, there is evidence that the second language learner does not mix without first evaluating the listener and the nature of the two languages. (The only occurrence of indiscriminate mixing is with the young child who has not yet realized he is drawing upon words from two different language systems.)

While the study of social and linguistic variables which affect language learning can help explain why something is learned or is not learned, a look at language in communication can help explain how language functions and how it may be processed by the learner. An examination of the question What's this? in the speech of Homer and first language learners reveals that it functions as more than just a question asking for information about an object. The pattern in adult speech can likewise operate in a number of ways that are not described by the traditional linguistic analysis of function. We will have to examine the function of language as it

occurs in the speech of both children and adults if we hope to construct a comprehensive, realistic picture of language acquisition.

Morpheme development must also be considered in a similar manner. Homer's progressive morpheme, for example, was structurally similar to all other children's, but did not function exclusively as a marker of progressive aspect. In fact, Homer did not semantically contrast tense with his verbs, but grouped them according to their phonological similarity. Variations on a base form were grouped into one class which he drew from in free variation. I'm go, I going, I go and I'm going functioned in Homer's speech as movement from one place to another in either the present or past tense. Later, he would sort through these similar phonological patterns to discriminate between the time periods they represented.

In addition to providing information about the function of Homer's progressive and his acquisition of new verb forms, an analysis of the discourse between Homer and native speakers of English revealed some of the principal process strategies in his rule formation. Homer imitated patterns addressed to him and also combined question-response patterns in discourse agreement. Such incorporations were most noticeable in his wh-question rule formation. The fact that Homer's language was in part processed through incorporation of question-response patterns challenges the Chomsky-based theory that language rules are derived from a single base structure to which transformations are applied. In the case of wh-questions, Homer was clearly focusing on more than single sentence units, forming his language rules by combining discourse patterns.

Language is a process involving a complex set of variables. We can certainly learn something about this process through experimentation, frequency counts, and ordering the appearance of morphemes. However, our conclusions about the process may be misleading without further consideration given to the form and function of speech in communication, the personality of the learner, the nature of the speech environment, and the nature of the input to the learner. All of these variables interact more or less obviously in the learning process. It is important not to overlook the significance of any of these variables when attempting to explain how language is acquired.

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